

WHAT IS CLAIMED IS:

1. An image forming apparatus comprising:  
a developer container for containing developer;  
developer amount detecting means for detecting an  
5 amount of the developer contained said developer  
container;

*Sub. A1*  
a memory for memorizing an information concerning  
the amount of the developer detected by said detecting  
means; and

10 output means for outputting the information  
concerning the amount of the developer, wherein said  
output means outputs the information concerning the  
developer memorized in said memory until the detection  
results of said detecting means is confirmed.

15 2. An image forming apparatus according to claim  
1, wherein said output means outputs the information  
memorized in said memory immediately after the power  
source of said apparatus is inputted.

20 3. An image forming apparatus according to claim  
1, wherein at least said developer container is  
detachably attachable to said apparatus, and said  
output means outputs the information memorized in said  
25 memory immediately after said developer container is  
inserted in said apparatus.

*AB*

00650752.082900

sub.  
to  
corrid.

4. An image forming apparatus according to claim 1, wherein said output means outputs the information memorized in said memory immediately after a door of an apparatus main body is closed.

5

5. An image forming apparatus according to claim 1 further comprising a display, wherein the information outputted from said output means is indicated on said display.

10

6. An image forming apparatus according to claim 1, wherein said apparatus can communicate with an electronic apparatus having a display, and said output means outputs the information to the electronic apparatus.

15

7. An image forming apparatus according to claim 1 further comprising a video controller for developing image data transmitted from an external apparatus and producing an image signal, wherein said output means is provided in said video controller.

20

sub.  
to

8. An image forming apparatus according to claim 7 further comprising a comparing means for comparing remained developer amount information memorized in said memory with remained developer amount information to be detected by said detecting means, wherein said

25

00650752-082900

comparing means is provided in said video controller.

7 ~~9~~. An image forming apparatus according to claim  
1, wherein the information concerning a remained  
5 developer amount is a remained amount information.

8 ~~10~~. An image forming apparatus according to claim  
1, wherein the information concerning developer amount  
is an information indicating that a remained developer  
10 amount is less than a predetermined amount.

9 ~~11~~. An image forming apparatus according to claim  
1, wherein the information concerning developer amount  
is an information indicating that no developer remains.  
15

10 ~~12~~. An image forming apparatus according to claim  
1, wherein the information concerning developer amount  
is an information indicating that a remained developer  
amount is less than a predetermined amount and an  
20 information indicating that no developer remains.

11 ~~13~~. An image forming apparatus comprising:  
a developer container for containing developer;  
developer amount detecting means for detecting an  
25 amount of the developer contained in said developer  
container;  
a memory for memorizing a remained developer

00650752.082900

sub.  
12  
cont.

amount detected by said detecting means, remained  
amount information memorized in the memory being  
serially updated; and

output means for outputting remained developer  
5 amount information, wherein said output means outputs  
either a remained developer amount information  
memorized in said memory or a remained developer amount  
information detected by said detecting means.

10 <sup>12</sup>~~14~~. An image forming apparatus according to claim  
<sup>11</sup>~~13~~, wherein said output means outputs the remained  
amount information memorized in said memory until a  
detection results of said detecting means is confirmed.

15 <sup>13</sup>~~15~~. An image forming apparatus according to claim  
<sup>11</sup>~~13~~, said output means outputs the remained amount  
information memorized in said memory immediately after  
the power source of said apparatus is inputted.

20 <sup>14</sup>~~16~~. An image forming apparatus according to claim  
<sup>11</sup>~~13~~, wherein at least said developer container is  
detachably attachable to said apparatus, and said  
output means outputs the remained amount information  
memorized in said memory immediately after said  
25 developer container is inserted in said apparatus.

17. An image forming apparatus according to claim

00650752.082900

sub.  
168  
C.D. 10-1

13, wherein, after a detection result of said detecting means is confirmed, said output means compares the remained amount information memorized in said memory with the remained amount information detected by said detecting means and outputs the information indicating the lesser amount.

*a*

5

15 ~~18~~. An image forming apparatus according to claim 11 ~~18~~ further comprising a display, wherein the remained amount information outputted from said output means is indicated on said display.

10

*sub. 13*

16 ~~19~~. An image forming apparatus according to claim 11 ~~19~~, wherein said apparatus can communicate with an electronic apparatus having a display, and said output means outputs the remained amount information to the electronic apparatus.

15

20. An image forming apparatus according to claim 13 further comprising a video controller for developing image data transmitted from an external apparatus and producing an image signal, wherein said output means is provided in said video controller.

20

18 ~~21~~. An image forming apparatus according to claim 20 further comprising comparing means for comparing the remained developer amount information memorized in said

25

*sub. 14*

sub.  
64  
cond.

memory with the remained developer amount information to be detected by said detecting means, wherein said comparing means is provided in said video controller.

5

22. A cartridge detachably mountable on an image forming apparatus comprising:

developer container; and

a memory for memorizing a remained developer amount in said developer container, wherein the

10

remained amount information memorized in said memory is serially updated.

15

23. A cartridge according to claim 22 further comprising developer amount detecting means for detecting an amount of the developer contained in said developer container.

20

24. A cartridge according to claim 22 further comprising a writing means for writing information into said memory.

25

25. A cartridge according to claim 22, wherein said apparatus is further provided with comparing means for comparing a remained developer amount information memorized in said memory with remained developer amount information to be detected by a detecting means.

006280-25205960

26. A cartridge according to claim 22, wherein said memory further memorizes an information indicating that a remained developer amount is less than a predetermined amount.

5

27. A cartridge according to claim 22, wherein said memory further memorizes an information indicating that no developer remains.

10

28. A cartridge according to claim 22, wherein said memory further memorizes an information indicating that a remained developer amount is less than a predetermined amount and an information indicating that no developer remains.

15

29. A cartridge according to claim 22 further comprising at least one of an electrophotosensitive member, charging means for charging said electrophotosensitive member, a developing means for supplying the developer to said electrophotosensitive member and cleaning means for cleaning said electrophotosensitive member.

20

30. An image forming apparatus comprising:

25

a developer container for containing developer;  
developer amount detecting means for detecting an amount of the developer contained in said developer

09650752.082900

container;

a memory for memorizing a remained developer amount detected by said detecting means, remained amount information memorized in said memory being serially updated; and

comparing means for comparing the remained developer amount information memorized in said memory with a remained developer amount information to be detected by said detecting means.

31. An image forming apparatus according to claim 30, wherein said comparing means compares the remained developer amount information memorized in said memory with the remained developer amount information to be detected by said detecting means and, when the difference between the informations is equal to or larger than a predetermined amount, determines that said apparatus is abnormal.

32. An image forming apparatus according to claim 31 further comprising a display, wherein said display shows an indication showing abnormality when said apparatus is abnormal.

33. An image forming apparatus according to claim 31 further comprising output means for outputting an information concerning the comparison results of said

00650752-082900



comparing means to an electronic apparatus having a display that can communicate with said apparatus.

34. An image forming apparatus according to claim  
5 31, wherein said memory further memorizes abnormality information.

35. An image forming apparatus according to claim  
10 31, wherein the remained developer amount information memorized in said memory is not updated when the difference between the remained developer amount information memorized in said memory and the remained developer amount information to be detected by said  
15 detecting means is equal to or larger than a predetermined value.

36. An image forming apparatus according to claim  
20 35, wherein the remained developer amount information memorized in said memory is not updated when the difference between the remained developer amount information memorized in said memory and the remained developer amount information to be detected by said  
25 detecting means is smaller than the predetermined value and the remained developer amount information to be detected by said detecting means is larger than the remained developer amount information memorized in said memory.

006280 2570560

006650752.082900

37. An image forming apparatus according to claim 36, wherein the remained developer amount information memorized in said memory is indicated when the difference between the remained developer amount information memorized in said memory and the remained developer amount information to be detected by said detecting means is smaller than the predetermined value and the remained developer amount information to be detected by said detecting means is larger than the remained developer amount information memorized in said memory.

38. An image forming apparatus comprising:  
a developer container for containing developer;  
developer amount detecting means for detecting an amount of the developer contained in said developer container;

a memory for memorizing an information concerning the developer amount detected by said detecting means, said memory memorizing first information indicating that a remained developer amount is less than a predetermined amount and second information indicating that no developer remains; and

output means for outputting information indicating abnormality of the apparatus in case that said detecting means detects the second information when the first information is not memorized in said memory.

39. A cartridge detachably mountable on an image forming apparatus comprising:

a developer container; and

a memory for memorizing first information

5 indicating that a remained developer amount in said developer container is less than a predetermined amount and second information indicating that no developer remains.

10 40. A cartridge according to claim 39, wherein said memory further memorizes an information indicating that abnormality has occurred in said apparatus or said cartridge.

15 41. A cartridge according to claim 40 further comprising developer amount detecting means for detecting an amount of the developer contained in said developer container.

20 42. A cartridge according to claim 40 further comprising a writing means for writing information into said memory.

25 43. A cartridge according to claim 40, wherein said apparatus is further provided with comparing means for comparing a remained developer amount information memorized in said memory with the remained developer

00650752.082900

amount information to be detected by detecting means.

44. A cartridge according to claim 40 further comprising at least one of an electrophotosensitive member, charging means for charging said electrophotosensitive member, a developing means for supplying the developer to said electrophotosensitive member, cleaning means for cleaning said electrophotosensitive member.

45. An image forming apparatus comprising:  
a developer container for containing developer;  
and

developer amount detecting means for detecting an amount of the developer contained in said developer container,

wherein said detecting means can detect an amount of the developer by a first detecting method and a second detecting method having a detection time shorter than that of the first detecting method.

46. An image forming apparatus according to claim 45, wherein said detecting means calculates developer amount by the second detecting method immediately after the power source of said apparatus is inputted and while an amount of the developer is detected by the first detecting method.

006280"2520960

47. An image forming apparatus according to claim 45, wherein at least said developer container is detachably attachable to said apparatus, and said detecting means calculates developer amount by the second detecting method immediately after said developer container is inserted in said apparatus and while an amount of the developer is detected by the first detecting method.

48. An image forming apparatus according to claim 45, wherein said detecting means calculates developer amount by the second detecting method immediately after a door of an apparatus main body is closed and while an amount of the developer is detected by the first detecting method.

49. An image forming apparatus according to claim 45 further comprising a memory for memorizing the amount of the developer detected by the first detecting means, wherein the developer amount information to be memorized in said memory is serially updated.

50. An image forming apparatus according to claim 49 further comprising abnormality detecting means for detecting abnormality by comparing the amount of the developer memorized in said memory with the amount of the developer to be detected by the second detecting

006280-25205960

method.

51. An image forming apparatus according to claim  
50, wherein said abnormality detecting means determines  
5 that said apparatus is abnormal when the difference  
between the amount of developer memorized in said  
memory and the amount of the developer to be detected  
by the second detecting method is larger than a  
predetermined amount.

10

52. An image forming apparatus according to claim  
51 further comprising a display, wherein said display  
shows an indication showing abnormality when said  
apparatus is abnormal.

15

53. An image forming apparatus according to claim  
51 further comprising output means for outputting an  
information concerning an abnormality information to an  
electronic apparatus having a display that can  
20 communicate with said apparatus.

54. An image forming apparatus according to claim  
50, wherein said memory further memorizes abnormality  
information.

006280.25705960